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ABSTRACT

State-mandated student testing in Ohio is a combination of three different initiatives: (1) competency-based education (CBE) assessment; (2) achievement and ability testing; and (3) proficiency testing. This report describes the current testing requirements and some of the characteristics of each of these types of assessment. CBE assessment was established in 1983 and redefined in 1989. The purpose of the state's CBE assessment is to see if students are learning the reading, composition, and mathematics curricula being taught in the local schools. The CBE focus is on locally established curriculum goals. The achievement and ability testing requirement was established in 1987. It mandated that districts give commercially published norm-referenced achievement and ability tests to students in grades 4 and 6 and a grade level to be designated by the State Board of Education in reading, language, and mathematics. Revisions in 1989 specified grade 8, and added grade 10. Proficiency tests were also initiated in 1987 to provide for statewide tests in reading, writing, mathematics, and citizenship. These tests are designed to see how students perform on specific learning outcomes identified by the state as important for all students. In contrast to the norm-referenced achievement and ability tests, these are criterion-referenced. Schools can use either type of test to meet the requirement for CBE instruction. (Contains two tables.) (SLD)

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OHIO STUDENT TESTING REQUIREMENTS

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The Legislative Office of Education Oversight (LOEO) serves as staff to the Legislative Committee on Education Oversight. Created by the Ohio General Assembly in 1989, the Office conducts studies of education-related activities funded wholly or in part by the state of Ohio.

This is a report of the LOEO to the Legislative Committee on Education Oversight. ***This report of the LOEO staff does not necessarily reflect the views of the Committee or any of its members.***

OHIO STUDENT TESTING REQUIREMENTS

State mandated student testing in Ohio is a combination of three different initiatives: competency-based education (CBE) assessment; achievement/ability testing; and proficiency testing. Each initiative has its own history and purpose. The chart below summarizes the major provisions of the three requirements and the dates of their origination.

OHIO STUDENT TESTING REQUIREMENTS

	COMPETENCY-BASED EDUCATION (CBE) (1983; 1989)	ACHIEVEMENT/ABILITY (1987; 1989)	PROFICIENCY (1987)
Description:			
• type	• Written assessment instruments, could be norm- or criterion-referenced	• Norm-referenced	• Criterion-referenced
• source	• Locally or commercially prepared	• Commercially prepared	• State prepared
• subjects tested	• Reading, writing, mathematics	• Reading, language, mathematics	• Reading, writing, mathematics, and citizenship
• format	• Variety of possible formats	• Multiple-choice format	• Multiple-choice except for writing sample
• item selection	• Items chosen to match what is taught in local curriculum	• Items chosen to represent multiple curricula • Items chosen to maximize individual differences (Districts select a test from 11 choices on state-approved list)	• Items chosen to reflect statewide learning outcomes
Participants:	• "Periodic assessment" of students at each grade level, 1-12	• All students in grades 4, 6, 8, and 10 Local option: test additional grades	• All students in grade 9 (effective 1990) and grade 12 (effective 1993)
Purpose:	• A norm-referenced test compares a student to other students using a survey of items from different curricula; • A criterion-referenced test measures student knowledge of a specific curriculum	• Compare students to national sample using a survey of items from different curricula • Identify most or least able students for special programs	• Measure student performance on state designated learning outcomes in reading, writing, mathematics, and citizenship
Uses in Ohio:	• State accountability • Measure student progress on locally developed pupil performance objectives	• State accountability • District accountability • Compare achievement to ability • Local option: - select gifted/talented or Chapter 1 students - meet competency-based education (CBE) assessment requirement	• State accountability • Required for diploma of basic competency (9th grade test) • Required for diploma of distinction or diploma of commendation (12th grade test)

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This Legislative Office of Education Oversight (LOEO) Research Memorandum describes the current testing requirements and highlights some contrasting characteristics of each of the three types. ***This report of the staff of the LOEO to the Legislative Committee on Education Oversight does not necessarily reflect the views of the Committee or any of its members.***

The three testing requirements have two common features which can add to confusion in understanding the mandates. First, all three focus on the same subject areas: reading, language/writing, and mathematics. (The proficiency test also measures citizenship.) Second, all three have roughly the same implementation dates, the 1989-90 and 1990-91 school years.

Competency-Based Education Assessment

The earliest statewide requirement is found in the competency-based education program. CBE was established in 1983 through the State Board of Education rules. School districts were to begin implementing CBE by the 1984-85 school year and have it fully in place by the 1989-90 school year.

The CBE requirement was revised and put into statute in 1989 through Am. Sub. S.B. 140. Section 3301.0715 of the Ohio Revised Code specifies that local CBE programs must include:

1. Pupil performance objectives for each grade level for the subject areas of reading, English composition (writing), and mathematics;

2. Curricula and instructional methods for each grade level designed to ensure that performance objectives can be attained;

3. Provision for periodic assessment of pupil performance in each grade level to measure progress toward achieving the performance objectives. As part of the assessment, each district is to adopt written assessment instruments that measure progress toward achieving the performance objectives;

4. Availability of intervention services in grades 1-11 for pupils who are failing to make satisfactory progress toward achieving the performance objectives; and

5. Written policies and procedures regarding participation or exemption from participation of handicapped pupils.

CBE assessment is focused on locally established curriculum goals. School districts choose or develop written instruments which measure their local pupil performance objectives. The instruments can be developed locally or by commercial publishers and can use a variety of formats--for example, checklists, work samples, and multiple-choice items.

The purpose of the assessment is to see if students are learning the reading, composition, and mathematics curricula being taught in the local schools and to intervene with those students who are not. Items are chosen because they match the local curriculum. There is no statistical limit on the number of students who can meet the locally set standard for acceptable performance; theoretically, all students can pass.

The 1983 rules required schools to "periodically assess" students. Assessments could be done with a variety of instruments, but students had to be "tested" at least once in grades 1-4, 5-8, and 9-11.

In its manual Competency Assessment and Testing, the Ohio Department of Education (ODE) draws a distinction between the terms "assessment" and "testing." Assessment is the umbrella term referring to any technique that records student performance, including systematic notation of student academic behavior, self-report inventories, interviews, rating scales, classroom tests, and locally or commercially prepared tests.

The more limited term "test" refers to the use of the same instrument administered to all students in a grade level under similar conditions. Three types of instruments are allowed as "tests": a locally prepared grade level test; a commercially prepared criterion-referenced test; and a commercially prepared norm-referenced test. (The differences between norm- and criterion-referenced tests are explained on page 6.)

The 1989 statute requires districts to provide periodic assessment of pupil performance in each grade level. Whether this means "testing" or "assessing" at each grade level is open to interpretation.

The 1989 statute (section 3301.0716(A)(3) of the Ohio Revised Code) also requires the State Board of Education to develop a "model" CBE program which includes "A recommended standardized test suitable for measuring progress in meeting the recommended performance objectives in composition, mathematics, and reading for each grade level."

The 1989 legislation directs districts to develop "written assessment instruments" and directs the State Board of Education to recommend a "standardized test." That is, the local districts can include a variety of types of instruments in their written assessments; the State Board is to confine itself to recommending a particular test.

The term "standardized test" is commonly used, erroneously, to refer to a norm-referenced achievement test. In fact, any test is a "standardized" test if it must be administered under the same (standard) conditions for its scores to be valid. That is, all the students are given a test which has the same items, with the same directions, under the same time constraints, and under the same environmental conditions (e.g., quiet room, desks or tables to write on, working alone, without interruption).

Achievement and Ability Testing

The achievement and ability testing requirement was enacted through Sub. H.B. 231 in 1987 (sections 3301.077 and 3301.078 of the Ohio Revised Code), effective beginning in the 1989-90 school year. It specified that districts give commercially published norm-referenced achievement and ability tests to students in grades 4, 6, and another grade level (to be designated by the State Board of Education) in reading, language, and mathematics. Revisions in 1989 (Am. Sub. S.B. 140) specified grade 8, added grade 10, and required that test results be made public for every district and every school building in the district.

Although most Ohio school districts have periodically administered norm-referenced achievement and ability tests, the 1987 legislation was the first to specify that all students in particular grade levels would be tested on particular subject areas statewide. Districts select a published test from a list of 11 which have met State Board of Education standards for technical quality and current norms.

Norm-referenced achievement and ability tests use multiple-choice items for ease of scoring. These tests compare student scores to those in a national sample, and compare student achievement to student ability.

Achievement tests focus on knowledge and skills taught in school. Test items for norm-referenced achievement tests are drawn from curricula in schools across the country; they do not reflect any specific curriculum taught in any particular school. Norm-referenced achievement tests are designed to rank students against each other, not to measure whether students have learned a particular curriculum.

Some test items are included with the expectation that few students will be able to answer them correctly. These items allow the test to differentiate among the students; that is, to spread out the scores across a normal (bell-shaped) curve. In this way the test can capture the broad range of achievement a national sample of students in that grade is likely to exhibit.

Each year students taking the test are compared to the scores of students in the publisher's national sample. This sample is the "norming group" (hence, a norm-referenced test). By definition, half of the students in the norming sample score below, and half score above, the median (or middle score) on the publisher's test. This score becomes the 50th percentile, or midpoint in the range of scores, to which all subsequent test takers are compared.

Because their fundamental purpose is to compare students to one another on a broad range of generally accepted skills and knowledge, norm-referenced tests are best used to select students for special programs; that is, to identify students scoring exceptionally better or worse than their peers on the test. They are not intended to measure if students have attained the knowledge and skills taught in their local schools. These tests (or others external to the local curriculum) can be useful, however, to periodically check on how the local curriculum is preparing students on generalized learning objectives.

Ability tests are designed to measure some of the abstract mental aptitudes and skills that are important to success in school. Typical sections assess students' ability to recognize sequences and to identify analogies, as well as their memory and verbal reasoning.

These tests are often mistakenly believed to measure innate intelligence. Instead, they measure the aptitude that students have attained for some school-like tasks through their experiences. The tests are more measures of "learned ability" than measures of overall "potential to learn."

In addition to comparing Ohio students' achievement and ability scores with those in the national sample, the students' scores on the achievement test are compared to their scores on the ability test to see if students are achieving at the level anticipated by their ability scores.

Proficiency Testing

Proficiency testing was also initiated in 1987 through Sub. H.B. 231 (sections 3301.0710, 3301.0711, and 3313.61 of the Ohio Revised Code). It requires statewide tests in reading, writing, mathematics, and citizenship.

Students must pass the state-developed ninth-grade proficiency test to receive a diploma of basic competency. They must pass the twelfth-grade proficiency test and meet additional criteria established by their local district or the State Board of Education to receive a diploma of distinction or a diploma of commendation. The ninth-grade test was first administered in November 1990; the twelfth-grade test goes into effect in 1993.

Proficiency tests are designed to measure how students perform on specific "learning outcomes" identified by the State Board of Education as important for all students. These learning outcomes may or may not reflect the current emphasis of a particular local curriculum.

Test items are chosen to match the ninth- and twelfth-grade learning outcomes. There is no limit on how many students can score above the state-designated standard for passing.

Norm- versus Criterion-Referenced Tests

Ohio student testing requirements use both norm- and criterion-referenced tests. The chart on the next page summarizes the important differences between these types of tests. The most crucial distinctions pertain to the uses for which the tests are designed.

Norm-referenced tests are designed to compare students to each other on a sample of items from a broad curriculum area, such as mathematics. The purpose is to distinguish among students, so the best performers and the worst performers can be identified. Consequently, items are put on the test which will differentiate among the students. An analogy would be a test designed to identify the best race car drivers. The items would ask the drivers to perform some hair-raising maneuvers in order to find the few drivers who can do them best.

Criterion-referenced tests are designed to see if students have achieved a certain set of skills and knowledge which they have been taught. Test items are chosen because they reflect the specific curriculum actually taught to students. The purpose is to determine whether students can meet a preset standard or criterion for passing. The analogy would be the test given to attain a driver's license. Items are chosen to test knowledge about the basic driving skills and rules. Theoretically all who study and practice for the test can pass it.

COMPARISON OF NORM-REFERENCED AND CRITERION-REFERENCED TESTS

	NORM-REFERENCED	CRITERION-REFERENCED
Example:	• Test to select the best race car driver • "Grading on a curve"	• Test to award a driver's license • "Everybody can pass"
Definition:	• Measure performance as compared against others on the same test (i.e., with reference to a "norm")	• Measure performance as compared against an absolute standard (i.e., with reference to a "criterion")
Recommended Uses:	• Selection of students for special programs • Classification of students	• Progress in specific curriculum
Inappropriate Uses and Limitations	• Not for measuring student performance on local program or curriculum • Not for frequent use in instruction	• Not for cross-curriculum testing • Not for selection or classification
Key Emphasis:	• Maximize individual differences • Survey generally accepted skills and knowledge.	• Explicit standards used for interpreting test performance (e.g., 70% = passing) • Items taken directly from specific curriculum
Item Selection:	• Sample from theoretically and generally defined content area • Select items that will distinguish among test takers (i.e., items that will force scores into normal (bell-shaped) curve	• Select items that match behaviors called for in specifically defined instruction
Necessary Input for the Test Development Process:	• Knowledge of curriculum content area on which students can be expected to differ	• Performance objectives which include an acceptable level (criterion) of performance
Types of Scores Reported:	• Percentile rank • Normal Curve Equivalents (NCE) • Stanine score • Grade equivalent score	• A statement of whether a student (or group of students) has correctly answered a predetermined percent of items
Example of Test Interpretation:	• "You performed better on this test than approximately 70% of the students in the group against which you are being compared."	• "You answered 70% of the items for this curriculum unit correctly."

Adapted from: Assessment Projects, Northwest Regional Educational Laboratory, Portland, Oregon

There is some confusion about using norm- and criterion-referenced tests for measuring how much students know. It is often said that all students should be "up to grade level." The question is, how is grade level defined?

If "grade level" means the middle score obtained by students in the publisher's norming sample, it is technically and theoretically impossible for all students in the sample to be up to the middle score on a norm-referenced test. By definition, half of the students taking the test will score below and half above the middle score.

In general, the scores for a large group of students tested subsequently on the norm-referenced test will be roughly distributed in the same way, about half above and half below the norming group's middle score. (Small groups of students in some buildings or districts, however, may have scores which fall below or above the norming group's middle score.)

To see if students meet a grade-level standard, a criterion-referenced test is needed to measure the knowledge and skills expected of students at that grade. On such a test, it is theoretically possible for all students to score at grade level. In practice, it may take some students longer than others to obtain this performance level.

In Ohio, the achievement and ability tests are norm referenced. The proficiency tests are criterion referenced, although the criterion relates to the state learning outcomes. School districts can choose either norm- or criterion-referenced tests, or other written assessment instruments, to satisfy the requirement for competency-based education assessment.

LOEO is currently conducting a study of the results from the first year of statewide norm-referenced achievement and ability testing. The study is focusing on what these test scores do and do not say about the reading, language, and mathematics performance of Ohio students.